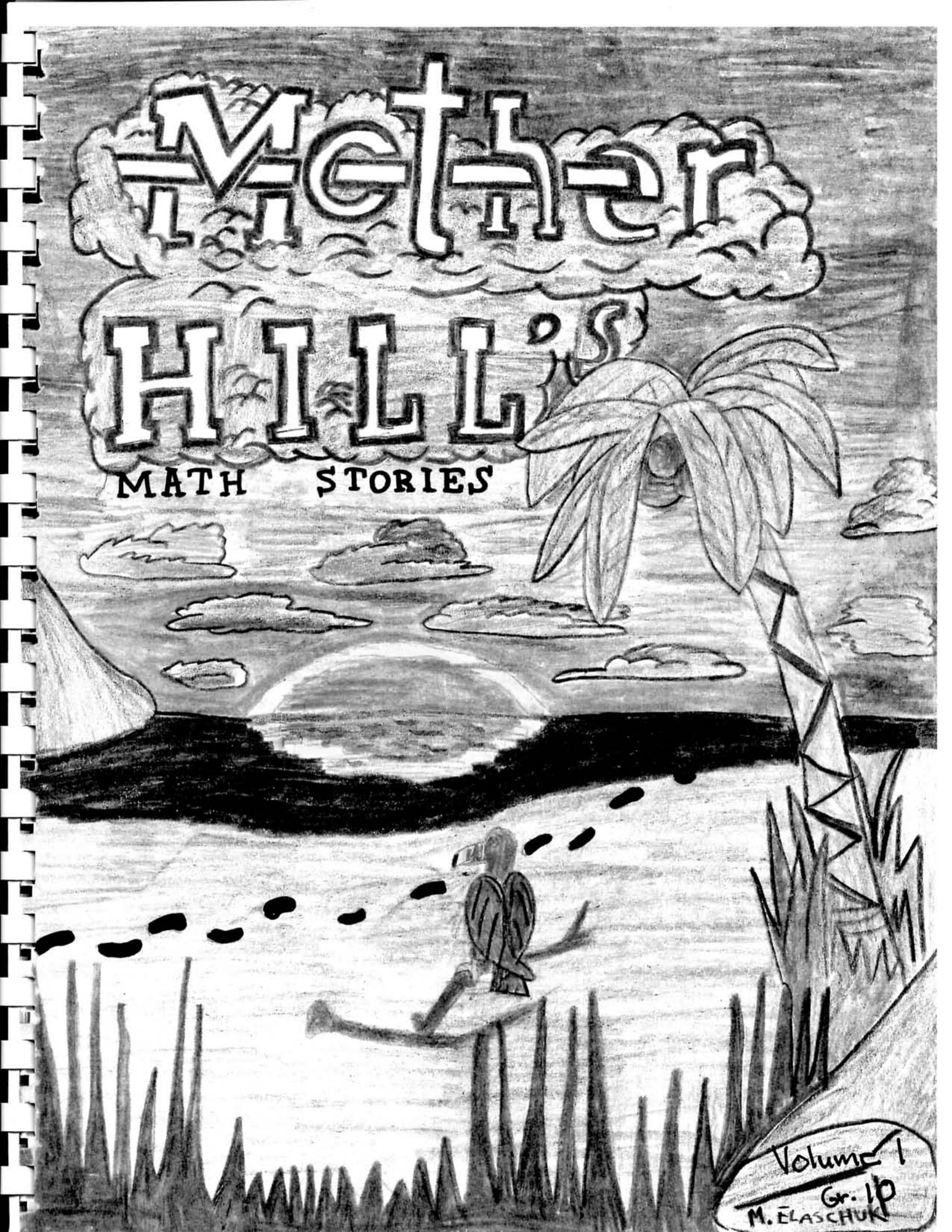


MetHer

HILL'S

MATH

STORIES



Volume 1
Gr. 1p
M. ELASCHUK

Bedtime Stories for the Scholastically Inclined

You are challenged to create an exciting innovative bedtime story (Friday nap time story) for the classes to come in the future after you. Your story must incorporate material from one of the units of study in the course.



Outline:

Title: _____

Unit of study to be covered: _____

Setting: _____

Main Characters: _____

Mathematical Concepts to cover: _____

1) _____

2) _____

3) _____

4) _____

Plot time line: _____

< _____

> _____

Marking Scheme:

	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
Covering Chapter Content	5 One concept covered well (full mathematical solution modelled).	10 Two concepts covered well or three concepts covered.	15 Three concepts covered well or four concepts covered.	20 Four or more concepts covered well.
Story Line	2 Has a story line.	3 Reads well with some errors.	4 Reads well with only a few errors.	5 Reads smoothly
Presentation	2 written legibly	3 computer processed	4 computer processed and colour	5 Computer processed, colour and graphics
Grammar and Punctuation	2 More than eight errors.	3 More than three errors but less than eight.	4 Less than three errors.	5 No errors.

Winnie-The-Pooh and The 100 Acre Wood

One day in the 100 acre wood, Winnie The Pooh had a list of things that he needed to do. All in one day Pooh Bear had to figure out the height of Owl's tree house so he could make a ladder for himself to climb up there, help Rabbit plant his carrots, find the angle of the roof on his gazebo, and go over to play with Kanga and Roo.

Well, he started off with the height of Owl's treehouse, but Pooh Bear realized he wasn't tall enough to just measure it with a metre stick or measuring tape, so he thought to himself what kind of math he should use. "Think, think, think.." thought Pooh Bear. Then he figured out what to use! In order to measure Owl's treehouse, he had to use inaccessible heights. So he went and found his clinometer and then went back to Owl's. From where Pooh was standing, it was 35° to the top of Owl's treehouse from the clinometer and 12.63 metres. Pooh Bear pulled out his pencil and paper and started to do the math. Here is his work:

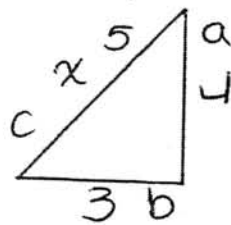
$$\begin{aligned}\tan \theta &= \frac{\text{opposite}}{\text{adjacent}} \\ \tan 35 &= \frac{x}{12.63} \\ (12.63)(\tan 35) &= x \\ x &= 8.84 \\ &+ 1.6 \\ \hline x &= 10.44\end{aligned}$$



So Owl's house is 10.44 metres from the ground to the top of of the tree house Now Pooh Bear had to head over to Rabbit's to help him with his garden.

On the way to Rabbit's, Pooh Bear tried to think of what he could so that Rabbit's carrots would be in a perfect line. So he thought and thought, and then realized he could use the Pythagorean Theorem. Pooh Bear knew that the garden was 4 metres up and 3 metres sideways and he had yet to figure out the diagonal line so that Rabbit would have a perfect garden. When Pooh finally got to Rabbit's

house they sat down to try and figure out the diagonal line, and here is what they came up with:



$$a^2 + b^2 = c^2$$

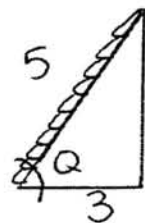
$$4^2 + 3^2 = c^2$$

$$\sqrt{c^2} = \sqrt{25}$$

$$c = 5$$

They figured out that the diagonal line is 5 metres. So then, they went outside and planted Rabbit's carrots. Well Pooh and Rabbit finished planting Rabbit's carrots and Rabbit rewarded Pooh with a pot of honey for lunch. Pooh Bear took the pot of honey and thought of how great it would be if he could eat it in his gazebo, so that was what Pooh Bear's next destination was.

When Pooh Bear arrived at his gazebo, he had remembered that he had to finish the roof still. Pooh was very disappointed that he had forgotten such a thing. So, he sat down and started to do the math.



SOHCAHTOA

$$\cos \theta = \frac{\text{Adjacent}}{\text{Hypotenuse}}$$

$$\cos \theta = \frac{3}{5}$$

$$\cos \theta = .6$$

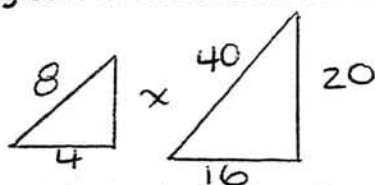
$$\theta = 53^\circ$$

Pooh Bear figured out that the angle of his roof on his gazebo is 53. Pooh Bear knew he couldn't finish off his gazebo today so he went inside his house to eat his honey. Pooh Bear finished his honey and decided that he should go over to Kanga and Roo's.



While Pooh was walking to, he was trying to think of things that him and Kanga, and Roo could do together. He couldn't really think of anything so he just decided to wait until he got there.

When he finally arrived at Kanga and Roo's, they all decided to play outside since it was such a nice day. While they were all jumping and playing around Pooh Bear noticed that Kanga could jump much higher than Roo. Pooh Bear wanted to figure out how high Roo could since they knew that Kanga could jump 20 metres straight up, 40 metres diagonally, and has a 16 metre stride, whereas Roo could jump 8 metres diagonally, and has a 4 metre stride, but how high he could jump straight up was unknown. Pooh Bear then knew that he needed to solve for x using similar triangles. Here is Pooh's work:



$$\begin{aligned} \frac{8}{40} &= \frac{x}{20} = \frac{4}{16} \\ 16(x) &= 4(20) \\ \frac{16x}{16} &= \frac{80}{16} \\ x &= 5 \end{aligned}$$

Pooh had figured out that Roo could jump 5 metres straight up. Pooh Bear ended off his day be very happy because he had done so much math, and had finished it all successfully. He decided that he was tired though, and wanted to go home to prepare himself for the next days adventures.

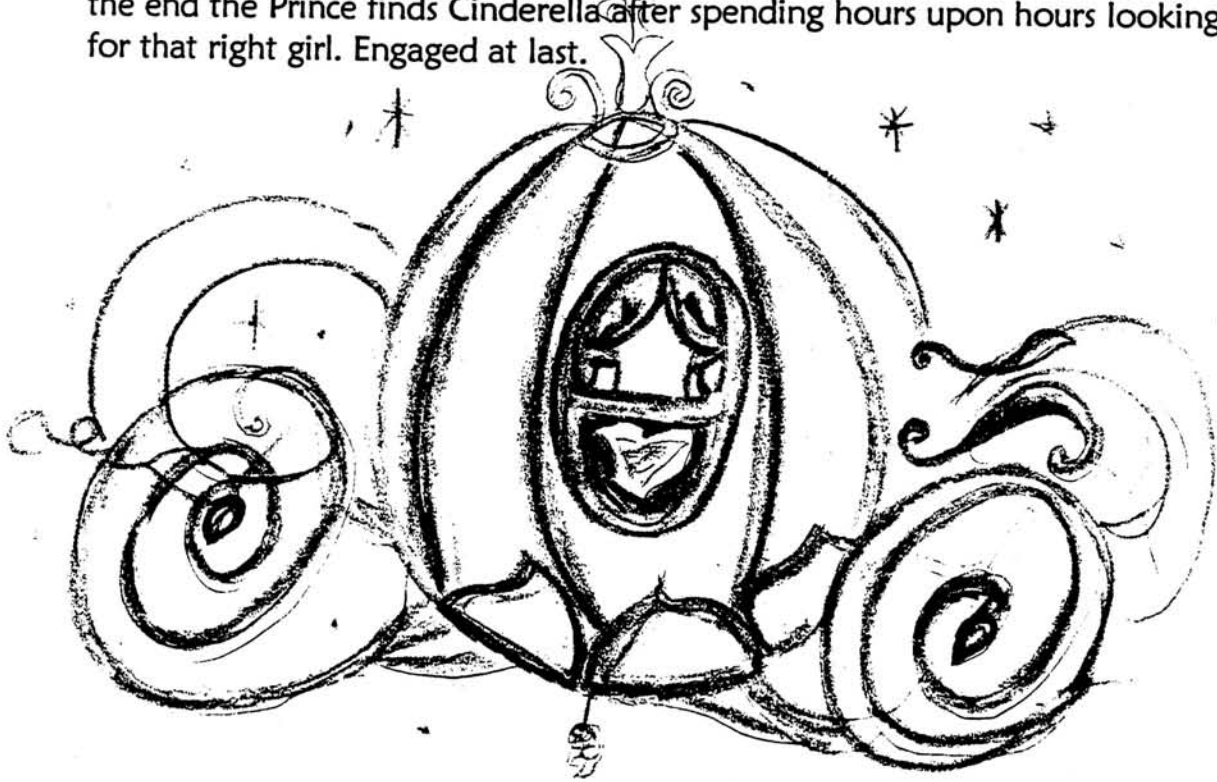
The End

Sarah Willetts



A Fairy Tale Wedding

Once upon a time, in the land of fairy tales happily lived the engaged couple, Cinderella, and Prince Charming. You all may know the story, on how this happy couple became to be, but incase you don't know. I'll make the long story short, Cinderella's cruel stepmother prevents her from attending the Royal Ball, and then all of a sudden a magical fairy godmother appears. With the wave of her wand and a bouncy "bibbidi-Bobbidi-Boo", the Fairy Godmother transforms a simple pumpkin into a magical coach, and Cinderella rags into a gorgeous gown. Then off went Cinderella to the ball, were she meets, and falls in love with the Prince; but flees when the stroke of midnight breaks the spell, and looses her slipper. In the end the Prince finds Cinderella after spending hours upon hours looking for that right girl. Engaged at last.

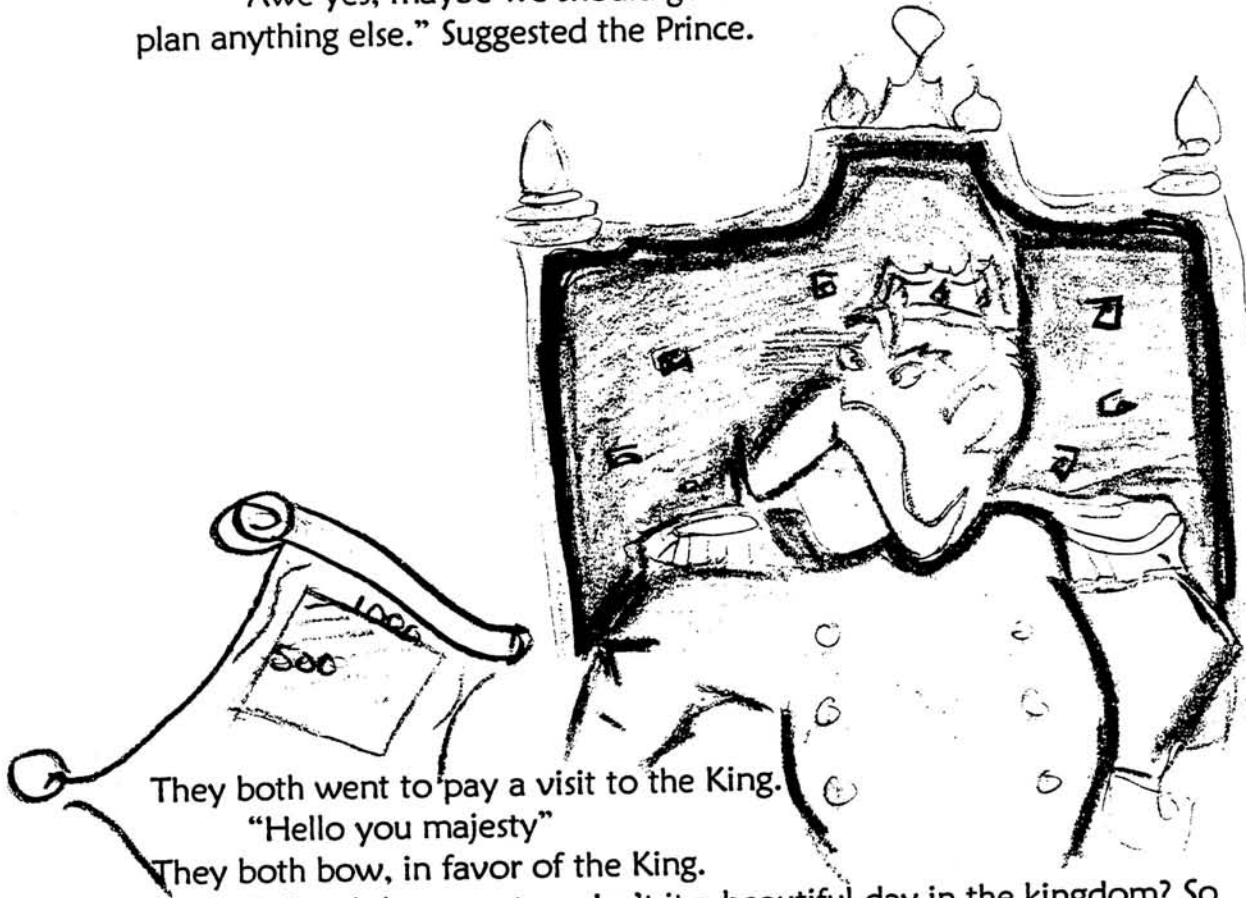


This big day is something special for both of them, and everything just has to be perfectly right. So they decided to plan it themselves. First off they need to plan the location of where they are going to hold the ceremony.

" I believe that we should have it in the ball room, because it is the biggest room in the whole castle", replied the Prince.

"Yes, that would be a good idea, but isn't your father the King planning to have a tea area, in that room?" questioned Cinderella.

"Awe yes, maybe we should go and have a chat with him before we plan anything else." Suggested the Prince.



They both went to pay a visit to the King.

"Hello you majesty"

They both bow, in favor of the King.

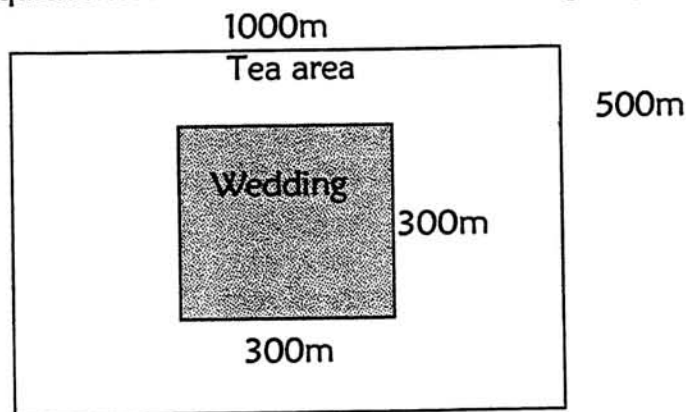
" Good day, you two. Isn't it a beautiful day in the kingdom? So what are you all up to this bright sunny day?" asked the King.

"Actually father, we have been planning for the big day, our wedding day, and that is what brings us here. We were wondering how much of the space are you going to need for your tearoom, that is taking place at the same time." said the Prince.

"Well, I'm only going to need a small space, so you don't need to worry. Your wedding area is about 300m by 300m, so I'll just use the outside area to hold the tea, and goodies." The King said. Smiles stretched across both of their faces.

"Thank you, for your time, father. We really appreciate it greatly. We should have plenty of room for our wedding." Anxiously replied Cinderella.

Cinderella and the Prince went back to the drawing board. They figured out that the total Ballroom was about 1000 meters by 500 meters. They came up with a quick sketch of how much of room is going to be used.



$$\begin{aligned}\text{Total Area} &= L \times W \\ &= 1000\text{m} \times 500\text{m} \\ &= 500,000\text{m} \\ \text{Area of Wedding} &= L \times W \\ &= 300 \times 300 \\ &= 90,000\text{m}\end{aligned}$$

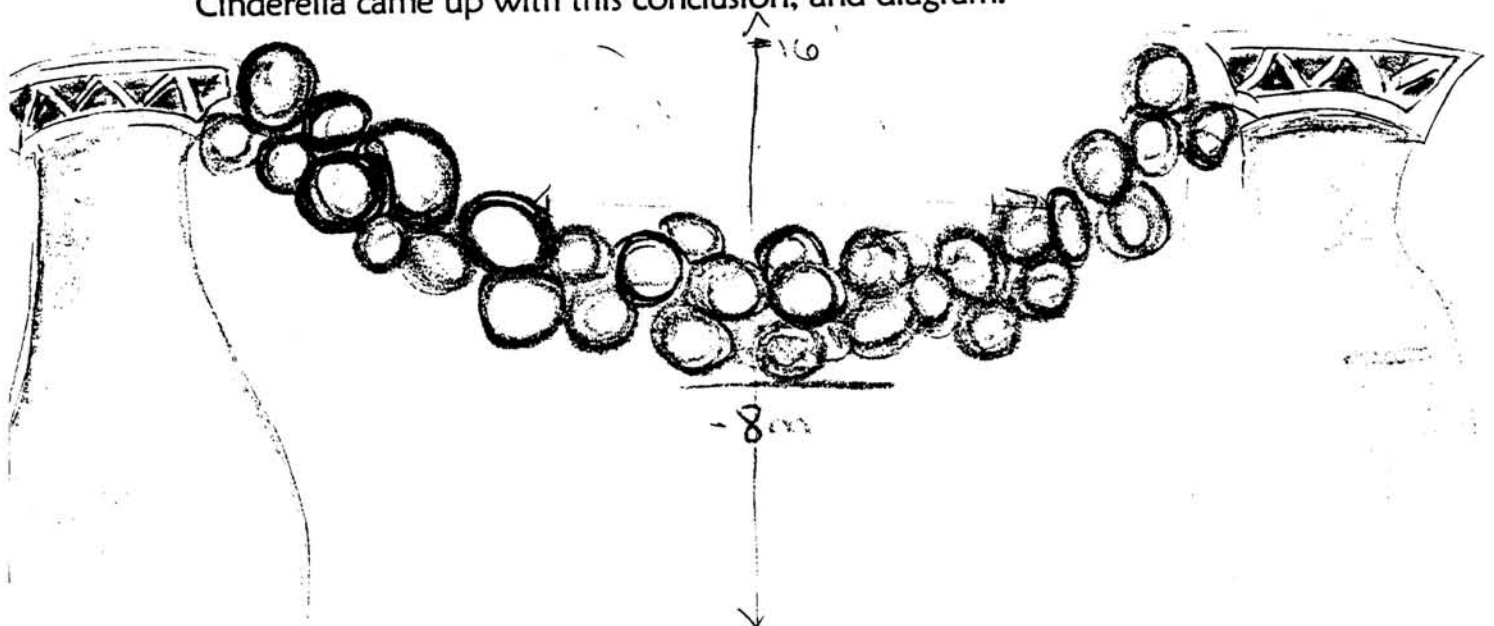
$$\begin{aligned}\text{Total Area of Space Taken by Tearoom} &= \text{Total} - \text{Wedding} \\ &= 1000(500) - 300(300) \\ &= 500,000 - 90,000 \\ &= 410,000\end{aligned}$$

After all the commotion on how much space the wedding is actually going to take up. They decided to start organizing all the decorations. Cinderella thought up an idea, where they could hang up balloons from the Ballroom ceiling. The only thing was they needed to know how low the balloons were going to hang, because they wouldn't want them to interfere with the dance afterwards.

"I'm really liking this idea Cinderella, but how are we going to figure this one out?" questioned the Prince.

"There is no need to worry, I have it all under control." Replied Cinderella.

Cinderella came up with this conclusion, and diagram.



She figured that the balloons were going to hang down 8 meters from the 16-meter high ceiling. Which gives the guest plenty of room to strut their stuff on the dance floor after the reception.

"Great work, you're a math genius Cinderella. Where did you ever learn how to do that?" asked the Prince.

The Prince seemed to have a puzzled look on his face.

"Thank you, I learned that in grade ten, from my math teacher, Mrs Hill. It's been such a long time, but it comes in handy a lot." boasted Cinderella.

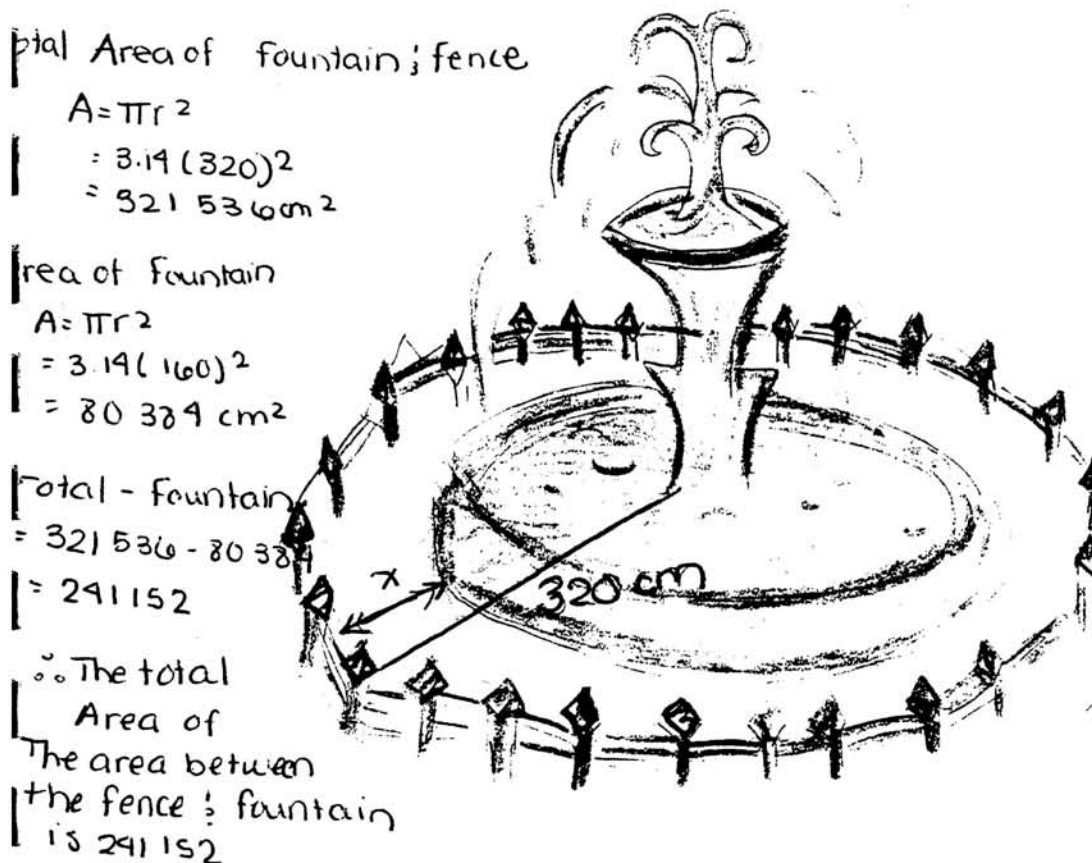
The Prince and Cinderella spent hours coming up with many other good ideas on how to decorate, but they couldn't agree on anything. Until the Prince came up with an idea that they could put in a water fountain in the middle of the dance floor, just to add to all the beautiful decorations.

"That's a good idea, Honey, it would be perfect. But we'd need to know the radius of the fountain, for total area. We can put a fence around it, so no one will fall into it, and get all wet." Anxiously replied Cinderella.

"I believe that the radius is unknown, but distance between the fountain and the fence should be 320cm, which gives the guests a perfect, enjoyable view of the fountain." Assumed the Prince.

Although Cinderella kind of had a puzzled look on her face.

The Prince came up with the idea, on all the distances, and drew a visual diagram for Cinderella, so it was easier to understand.



... Two weeks later, it was the big day they both were planning, and waiting for. There were more than 100 royal guests invited from all over the world. They were there to celebrate the joining of Cinderella and The Prince in marriage. Many of the guests commented on all the beautiful decorations, and all the hard work that they had to go through.

After the ceremony the guests were directed to the ballroom for the dance. They were told that the food and everything would have been held in another room. All very thirsty, and hungry, went and got something to eat. The hundred guests grab something to eat...

"So Mathematically we'd factor them out" said Cinderella

$$=100+10G$$

$$=10(10+G)$$

"Yes, then when they came back in, we'd use the shaking the hands," replied the Prince.

$$=10(10+G)$$

$$=100+10G$$

The dancing, and the great food, went on until 2:00 in the morning, until the last guest left. Cinderella, and the Prince, after having an exhausting day, left for their honeymoon, in Fairy Hollywood Land! They wrote some post cards, saying what a wonderful time they are having. Right now they are probably sitting in a hammock, relaxing, and enjoying their peaceful time alone. They lived happily ever after.



Little Miss Sunshine's Birthday Party

It was a fun Saturday afternoon and, Little Miss Sunshine was turning 9 years old. All her friends were invited to her birthday party and was planning many fun activities. Little Miss Sunshine was expecting 8 guests: Little Miss Fun, Little Miss Giggles, Little Miss Naughty, Little Miss Chatterbox, Little Miss Scatterbrain, Little Miss Smarty Pants, Little Miss Brain and Little Miss Sweet Heart.

Time was passing and Little Miss Sunshine was getting more excited by the minute. She heard the doorbell...Ding Dong! It was Little Miss Fun, Little Miss Giggles, Little Miss Chatterbox and Little Miss Scatterbrain. They all came in, went into the backyard and sat at the picnic table anxiously awaiting the others. Little Miss Sunshine didn't know how to pass the time so she decided to figure out the total number of guests coming to her party. She went and got a piece of paper and a pen and they all figured it out.

$$\begin{aligned}(x + 8)(x + 1) \\&= x^2 + 1x + 8x + 8 \\&= x^2 + 9x + 8\end{aligned}$$

They were all so excited that they figured out the total number of guests expected at the party, so they decided to figure out how many guests were still coming by what they learned in math class.

$$\begin{aligned}4(x + 4) \\&= 4x + 16\end{aligned}$$

Time went by and the four guests were wondering why the other four hadn't shown up. They waited. Finally, an hour later, Little Miss Naughty, Little Miss Smarty Pants, Little Miss

Brain and Little Miss Sweet Heart showed up. They were all excited that they had shown up, but upset that they had come late.

"We missed all the fun" said Little Miss Brain.

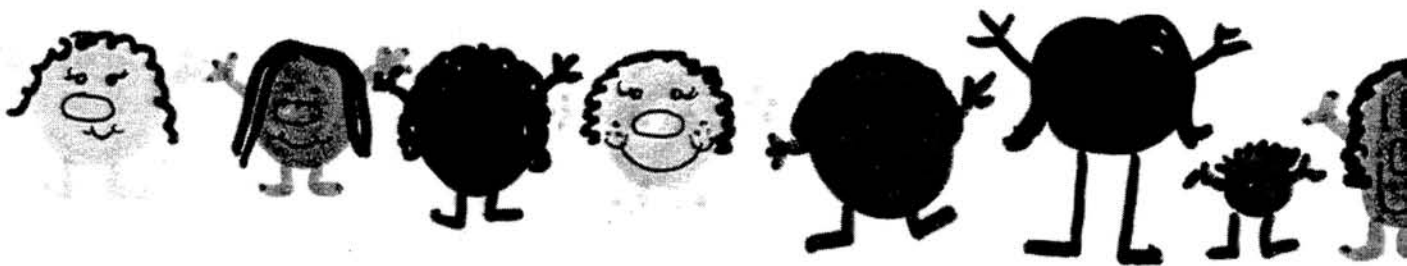
"What do you mean? The party is just starting!" replied Little Miss Sunshine.

"Well it looks like you've done some math..."

"We did, but only to pass the time. If you want we can do more later" suggested Little Miss Sunshine.

"That sounds like fun, lets get this party started."

Little Miss Sunshine clicked on her favourite music and they all began to dance.



They were having a great time, when Little Miss Sunshine's mom decided it was time for presents. "Girls its present time, come into the living room" said Little Miss Sunshine's mom.

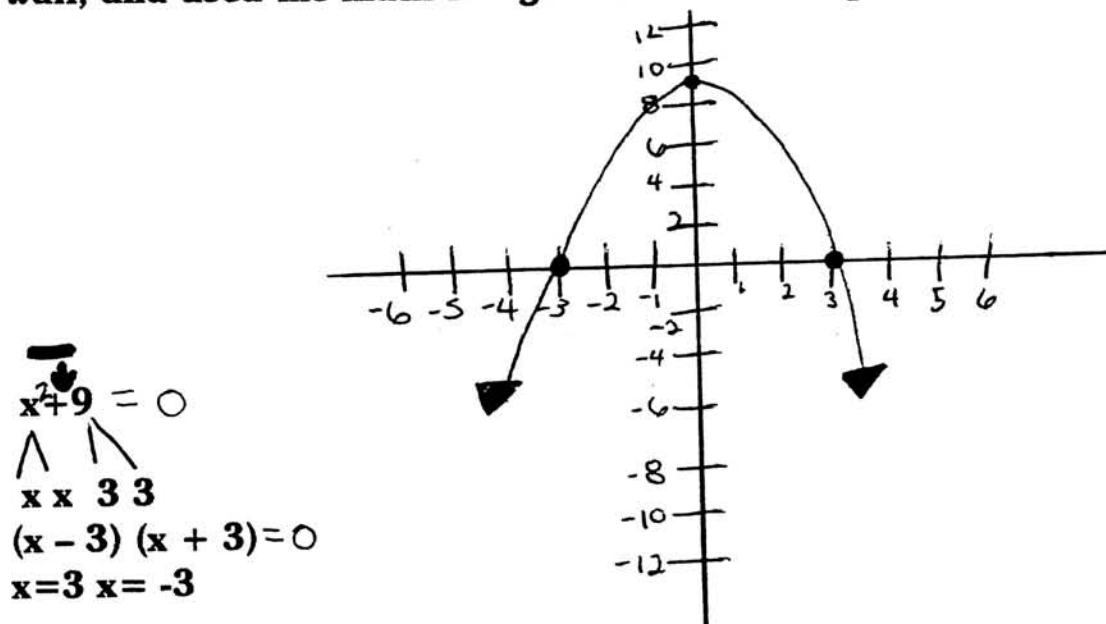
"Yay!" said the girls. They came running in anxiously to see Little Miss Sunshine's reaction to their presents. From Little Miss Brain, she got a math set full of protractors, compasses and lots more. From Little Miss Fun, she got a teddy bear and some lollipops. Little Miss Naughty gave her a basketball, while Little Miss Chatterbox gave her a karaoke machine. Little Miss Scatterbrain gave her some puzzles, Little Miss Sweet Heart gave her some assorted candies and finally, Little Miss Smarty Pants gave her a beaded bracelet that she made.

"Thank you all for your presents, They were so pretty" said Little Miss Sunshine.

"Girls, it's time for cake and ice cream!" yelled her mom.

All the girls went running into the kitchen with smiles on their faces. They all sat around the table and started singing Happy Birthday..."Happy Birthday to you, happy birthday to you..." Little Miss Sunshine's face went red as a tomato.

Later on they were all getting bored, so Little Miss Sunshine decided to play games. They got out the pin the tail on the donkey sheet and put it on the wall. Little Miss Sunshine promised Little Miss Brain more math, so they decided to add math into the game. They pictured a Cartesian Plane on the wall, and used the math to figure out where to pin the tail.



Little Miss Brain was so excited about her math ability, she figured out that if she put the tail at (0,3) and (0,-3) she would get it exactly on the point where the tail belonged. Because Little Miss Brain figured out exactly where to put the tail, Little Miss Sunshine's mom gave her a prize. She received a lollipop with some sour candy. "Thank you very much Mrs. Sunshine. I love lollipops," said Little Miss Brain. The girls were having a great time, laughing and giggling. The backyard was full of happy little girls. Or so we thought...

"Gimme those lollipops," snarled Little Miss Naughty.

"No, they are mine. I won them fair and square." Replied Little Miss Brain.

"Both of you stop it, you're ruining my party" interrupted Little Miss Sunshine.

All three of them started yelling at each other. What started out being a fun party ended up being a huge mess. Little Miss Sunshine ran inside crying, and all the other girls ran and got Mrs. Sunshine.

"What's going on here girls?" asked Mrs. Sunshine.

"She tried to steal my lollipops, and she made Little Miss Sunshine cry," protested Little Miss Brain.

"I want to go home," said Little Miss Sweet Heart.

"So do I," said Little Miss Fun.

The party was ruined, and Little Miss Sunshine was very upset. She sat up in her room and cried a lot. Little Miss Sweet Heart, Little Miss Fun, Little Miss Naughty and Little Brain all went home. The rest of the girls sat and waited until the party was over for their parents to come. Finally, 4 o'clock came and all the girls had gone home. Mrs. Sunshine went up to Little Miss Sunshine's room and they talked.

"Mom, why did my party get ruined?" asked Little Miss Sunshine.

"I'm not quite sure, but I'm sure its all for the best." Replied Mrs. Sunshine.

"let's do something Mom, just mom and daughter" suggested Little Miss Sunshine.

"Sure dear. What do you want to do?" asked her mother curiously.

"Let's figure out how many people left my party because of Little Miss Naughty." Said Little Miss Sunshine.

"Ok let's get your pen and paper and go downstairs," replied her mother.

They both went downstairs and figured it out:

$$x^2 + 3x + 2 = 0$$

$$2 \times 1 = 2$$

$$2 + 1 = 3$$

$$(x + 2)(x + 1) = 0$$

$$x = -2 \quad x = -1$$

Although Little Miss Sunshine's party was ruined, she still had a great time figuring out all kinds of stuff using math. She realised that math was fun! Little Miss Sunshine was happy and eventually became friends with Little Miss Naughty, even though she did ruin her party.

The end



Anna F.

How The Grinch Tried To Ruin My Party



Today is my birthday, Sam I am. I'm having a party, yes I am.

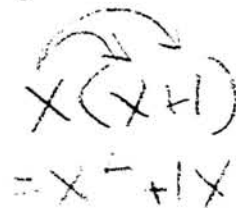
Everyone is coming from over and around, coming to my party, coming from town.

They will all be coming, they should be here soon. Look at the clock, its almost noon!

Everything is ready, the refreshments are cold. What a wonderful party I'm about to hold!

Waiting and waiting, oh where can they be? Wait! There is the doorbell, its someone for me!

Well hello Mr. Cat, you're the first one here. Just have a seat while I'll snap you a beer!



Only one guest, what a pity I say. Wait it's the doorbell, hip hip hip hooray!

It's Oggle and Google come in if you will, come meet Mr. Cat, he lives over the hill!

$$\begin{aligned} & (x+1)(x+2) \\ & x^2 + 2x + x + 2 \\ & = x^2 + 3x + 2 \end{aligned}$$

I'm expecting more friends from here and from there, even Sue Acrobat from the local town fair!

May I offer you all some green eggs and ham, I'll take a pass cause I'm a veggie man!

I'll be back in a jiff, must get the door. Look, its Sue Acrobat and many friends more.

Come one and all and join in the fun. There is good food and fun games for everyone!

$$\begin{aligned} & (x+1)(x+2) + 7 \\ & = x^2 + 3x + 2 + 7 \\ & = x^2 + 3x + 9 \end{aligned}$$

All my guests are here, let the party start! Try some of my cake, it's a real work of art!!

The door bell again? Oh who could that be? Everyone is here from what I can see.

Oh its you Mr. Grinch... why have you come? You were not invited by me or anyone!

You may enter and stay for a while I guess, as long as you promise you don't make a mess!

Mr. Grinch marched right in, ignoring my plea and created such chaos with undying glee.

The guests were hysterical, they all shouted and screamed "Mr. Grinch get out now --you are rude and you're mean."

Mr. Grinch looked around at the mess he created and smirking his smirk, he said "I'm elated!"

He then took his leave, to the relief of all there and I shouted to him "don't come back, don't you dare!"

With Mr. Grinch gone there arose a great cheer, my guests filled their glasses and guzzled their beer.

We partied all day and into the night, dancing and singing with all of our might!

In ending this tale I would just like to say, don't invite Mr. Grinch to your next birthday!

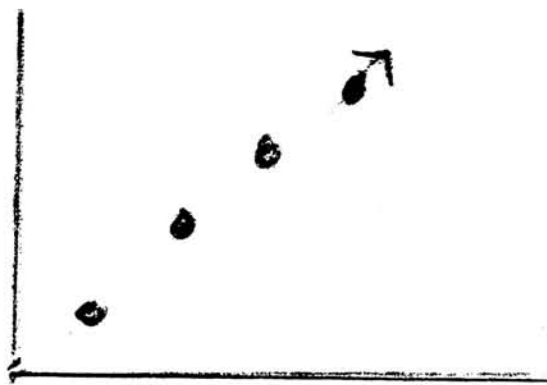
$$x^2 + 2x$$

$$x(x+2)$$



pOoH's AdVeNTuRe

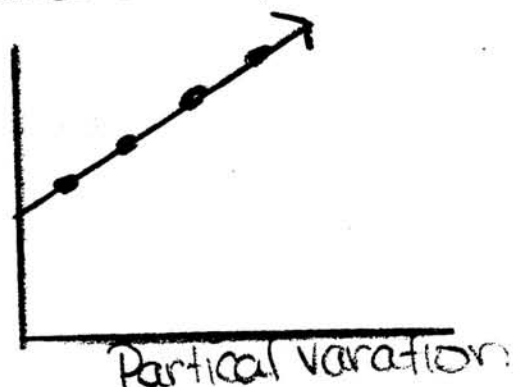
One Bright sunny day in the hundred acre woods. Not far from the river bank there sat pooh and Christopher Robin, just sitting there planning a party for pooh. "Now Pooh" said Christopher Robin "who are we going to make the invitations for? Pooh said "Well, Piglet, tiger, and Eeore." "O.K." said Christopher Robin. They sat there making the invitations. "Now you see Christopher Robin" said Pooh, "I'm going to need a lot of honey for when I go hibernate, and I don't have enough" (Hint, Hint). And they both laughed. "I have to collect a little at a time" so they drew out a graph to show how he had to collect the honey.



Direct Variation

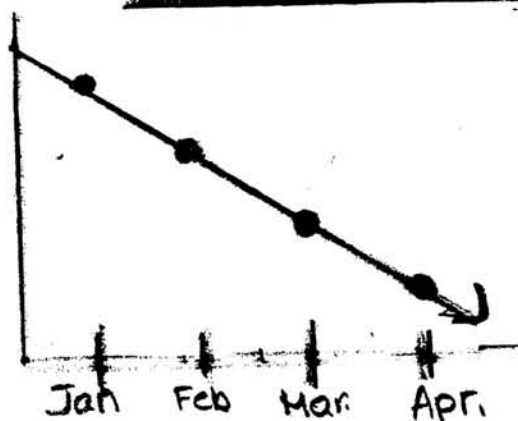
"That's a direct variation," explained Pooh. "Pooh, you know what? We're all going to get you some honey because that's what we thought you'd like." They drew another graph to show if he got a lot of honey for his birthday. "We collected a little at a time

then afterwards it would be a partial variation," explained Christopher Robin.



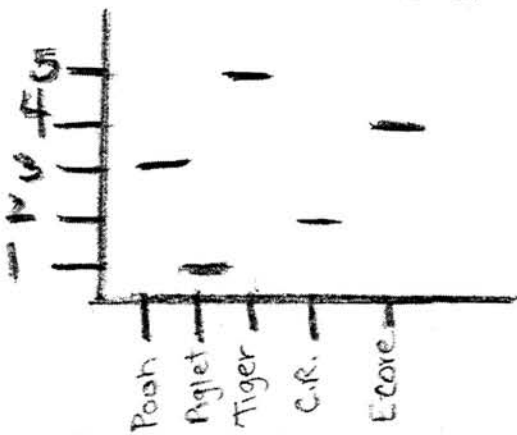
"Well thank you" said Pooh excitedly. Then they sketched out a graph that they would need to show how much honey Pooh would need.

Linear Function



"In January and February you will need more" said Christopher Robin. "In March and April I won't need as much", said Pooh, "and I know what that is" said Pooh, "that's a linear function!" "That's right!" said Christopher Robin. The next day they went out and gave everyone the invitations. Finally the big day arrived and Pooh could hardly wait until everyone got there. They all arrived at the same time and opened presents. Everyone gave Pooh honey and he was very pleased. Now he had enough for the winter.

He thanked everyone and then asked if they all wanted cake, everyone did. By drawing out a graph of how much cake they ate.



Pooh ate three pieces of Strawberry cake, Piglet ate one piece Tiger ate five, Christopher Robin ate two and Eeor ate four pieces. After they were all done the cake Piglet asked Pooh "is that a piece wise linear function" and Pooh said "why yes Piglet that is right." They played lots of different games, such as pin the tail on the donkey and musical chairs. It was getting very late and everyone was so tired because of all the excitement they had that day. Everyone said happy Birthday for the last time and everyone went home. A few months later snow had started to cover the ground and it was time for Pooh to go hibernate. He said goodbye to all his friends, gave them all big hugs and told them he would see them in the spring. "Pooh, wait" said Christopher Robin "before you go would you please help me solve this word problem" "why yes" said Pooh. "My problem says to re-arrange $2x - 4y + 8 = 0$ into $y = mx + b$ form to see the path you take to hibernate."

$$\begin{aligned}
 y &= mx + b \\
 2x - 4y + 8 &= 0 \\
 -4y &= -2x - 8 \\
 \frac{-4y}{-4} &= \frac{-2x - 8}{-4} \\
 y &= +\frac{1}{2}x + 2
 \end{aligned}$$

"Thanks a lot Pooh, you're a real pal!" And Christopher Robin gave him a big hug.

THE eNd!

